

Chlamydial proctitis?

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SUMMARY *Chlamydia trachomatis* was isolated from 21 (7%) of 309 specimens obtained in October 1982 from the rectum of homosexual men undergoing proctoscopy. During the same period *Neisseria gonorrhoeae* was isolated from 12 (3%) of 454 specimens obtained similarly. The clinical features of patients infected with each of these micro-organisms were compared with those of an uninfected group of homosexual men. No characteristic diagnostic features were noted in the infected men.

Introduction

Interest in rectal infections with *Chlamydia trachomatis* in homosexual men has increased since this micro-organism was first isolated from the rectum by Goldmeier and Darougar in 1977.¹ The possibility that chlamydiae might be the aetiological agents in some cases of non-gonococcal proctitis (NGP) and that NGP might be analogous to non-gonococcal urethritis (NGU) has been proposed, but the results of several studies have now indicated that *C trachomatis* associated rectal infection is less common than urethritis caused by *C trachomatis*.²⁻⁵

Quinn *et al* isolated chlamydiae from 14 (8%) of 171 homosexual men and described a wide range of conditions from severe ulcerative proctitis to asymptomatic infection.² The evidence presented suggested that severe disease was produced by lymphogranuloma venereum (LGV) serovars of *C trachomatis*, whereas milder disease was produced by oculogenital serovars. When the series was extended to include 288 patients, the prevalence of chlamydial infection remained at 8% but was twice as great in symptomatic (12%) as in asymptomatic (6%) men.⁵ Moreover, chlamydial infection was always associated with cytological evidence of proctitis detected by a Gram stained smear of rectal wall exudate. These data were interpreted as suggesting that *C trachomatis* is a pathogen in the rectum, the severity of the disease being influenced by the serovar of the infecting micro-organism.

McMillan *et al* isolated *C trachomatis* from the rectum of six (4%) of 150 homosexual men, two of whom also had rectal gonorrhoea. The four remaining patients, however, had neither symptoms nor signs of proctitis.³ Furthermore, Munday *et al* who isolated the micro-organism from 10 (6%) of 180 men, could find little evidence of pathogenicity; of the six men who did not have concurrent rectal gonorrhoea, two were asymptomatic, two had no abnormal physical signs, and three had no cytological evidence of proctitis.⁴ These conflicting data may be explained by different selection of patients, different referral patterns, or a different prevalence of highly pathogenic serovars of LGV or non-LGV type.

To study the prevalence and clinical associations of chlamydial rectal infection in homosexual men attending a British sexually transmitted diseases (STD) clinic, all men undergoing proctoscopy during one calendar month were examined for *C trachomatis*.

Patients, materials, and methods

During October 1982, homosexual men attending the Praed Street Clinic and undergoing proctoscopy to exclude a diagnosis of gonorrhoea had an additional swab taken to be examined for *C trachomatis*. A polyester sponge swab⁶ was rubbed over the area of exposed rectal mucosa and was then expressed in sucrose-phosphate medium containing 10% fetal calf serum (2SP) supplemented with gentamicin (10 mg/l).⁴ *C trachomatis* was isolated in cycloheximide treated McCoy cells, which were stained by Giemsa reagent and examined by dark field microscopy.⁷ Isolates were passaged in irradiated McCoy cells and were serotyped by the simplified one way method of Wang *et al*.⁸

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Results

During the 21 working days of the study we obtained 454 specimens suitable for examination for *N gonorrhoeae*, 309 (68%) of which were suitable for attempted isolation of *C trachomatis*. Some patients were examined on more than one occasion.

N gonorrhoeae was isolated from 12 (3%) of the 454 specimens. There were, however, 28 specimens from which gonococci were not cultured, although the initial Gram stained smears showed Gram negative intracellular diplococci prompting a presumptive diagnosis of gonorrhoea. As an unusually poor correlation was found between the results of urethral Gram stained smears and urethral cultures during the month concerned, it is possible that some of the smear positive, culture negative results were false negative results and that the patients were infected with *N gonorrhoeae*. It is likely, therefore, that the true prevalence of gonococcal rectal infection was between 3% and 9%. *C trachomatis* was isolated from 21 (7%) of the 309 specimens submitted, including two isolations from the same patient.

To assess the importance of the two putative pathogens, the clinical features of the patients infected with *N gonorrhoeae* or *C trachomatis* were compared with those of a group of patients selected at random from whom neither micro-organism could be isolated. One chlamydia positive patient, who had a positive Gram stained smear but negative culture for *N gonorrhoeae*, was excluded. He was the only patient in whom evidence of infection with both micro-organisms was detected. Two other patients were excluded from the analysis as their records were incomplete. Thus, 17 chlamydia positive patients were compared with 11 patients who had *N gonorrhoeae* infection confirmed by culture and 19 men from whom neither micro-organism could be isolated.

The mean age and proportion of men with a history of STD were similar in the three groups (table). Although the proportion of uninfected men

presenting with symptoms was less than half that of infected men, cytological evidence of infection, as detected by examination of a Gram stained smear of rectal wall exudate for polymorphonuclear leucocytes, was as common in uninfected as in infected men. Reliable data on the macroscopic appearance of the rectal mucosa were not available as the examinations were performed by several different observers.

It was possible to serotype only four chlamydial isolates: those belonged to serovars D, D, D/E, and H.

Discussion

The prevalence of chlamydial rectal infection in this study was similar to that reported in previous studies,^{2,3,5} including our own.⁴ In an unselected STD clinic population, the prevalence of chlamydial and gonococcal rectal infections was similar.

The results of this study confirm those of our previous study,⁴ and suggest that rectal chlamydial infection, like cervical infection, is often asymptomatic. We have now studied a total of 23 patients who had positive cultures for *C trachomatis* and negative cultures for *N gonorrhoeae*: 10 (43%) were asymptomatic and a similar number had no cytological evidence of proctitis. Moreover, severe proctitis due to the LGV serovars of *C trachomatis* appears to be an uncommon phenomenon in the United Kingdom. Only one of the patients in our first series had clinical signs that were suggestive of LGV and none did in the current series. Of the strains serotyped in this study, none was identified as an LGV serovar. The known pathogenicity of chlamydiae suggests that they may sometimes be responsible for the symptoms experienced by patients with proctitis, although, for the most part, chlamydiae and gonococci appear to be relatively innocuous in the rectum. This raises the obvious question of what might be the cause of the disease and symptoms experienced by these patients, a question that is likely to be solved only by even more comprehensive microbiological investigations and controlled

TABLE Demographic and clinical features of men with and without rectal infections with *Chlamydia trachomatis* and *Neisseria gonorrhoeae* (figures are numbers (and percentages) of patients except where stated)

	Patients with rectal isolates of:		
	<i>C trachomatis</i> only (n = 17)	<i>N gonorrhoeae</i> only (n = 11)	Neither (n = 19)
Mean (SD) age (years)	32 (7)	29 (8)	33 (7)
History of sexually transmitted disease:			
Syphilis	6 (35)	3 (27)	7 (37)
Gonorrhoea	8 (47)	6 (64)	13 (68)
Non-gonococcal urethritis	6 (35)	4 (36)	10 (53)
Non-gonococcal proctitis	4 (24)	3 (27)	7 (37)
Symptoms of proctitis	7 (41)	4 (36)	3 (16)
Cytological evidence of proctitis*	7 (41)	2/6 (33)	7 (37)

* ≥ 5 polymorphonuclear leucocytes per high power field.

antibiotic treatment trials. Although apparently unimportant for the patient with proctitis, rectal chlamydiae and gonococci provide a reservoir for infection of the urethra and it would seem prudent to treat patients with proctitis accordingly. Furthermore, as there are no simple clinical diagnostic criteria, and as contact histories are of little value in many homosexual men, the diagnosis of chlamydial infection can be made only by identifying the micro-organism. The diagnosis of chlamydial rectal infections will possibly be simplified by the introduction of a direct monoclonal antibody test (Microtrak, Syva, UK), which has been shown to be specific and as sensitive as culture for the diagnosis of chlamydial infections of the urethra, cervix, and conjunctiva.^{9 10} The technique is currently being evaluated in infections of the rectum.

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References

1. Goldmeier D, Darougar S. Isolation of *Chlamydia trachomatis* from throat and rectum of homosexual men. *British Journal of Venereal Diseases* 1977; 53: 184-5.
2. Quinn TC, Goodell SE, Mkrichian E-C, et al. *Chlamydia trachomatis* proctitis. *N Engl J Med* 1981; 305: 195-200.
3. McMillan A, Sommerville RG, McKie PMK. Chlamydial infection in homosexual men: frequency of isolation of *Chlamydia trachomatis* from the urethra, ano-rectum, and pharynx. *British Journal of Venereal Diseases* 1981; 57: 47-9.
4. Munday PE, Dawson SG, Johnson AP, et al. A microbiological study of non-gonococcal proctitis in passive male homosexuals. *Postgrad Med J* 1981; 57: 705-11.
5. Stamm WE, Quinn TC, Mkrichian E-C, Wang SP, Schuffler MD, Holmes KK. *Chlamydia trachomatis* proctitis. In: Mårdh P-A, Holmes KK, Oriel JD, Piot P, Schachter J, eds. *Chlamydial Infections* Amsterdam: Elsevier Biomedical Press. 1982: 111-4.
6. Oates JK, Selwyn S, Breach MR. Polyester sponge swabs to facilitate examination for genital infection in women. *British Journal of Venereal Diseases* 1971; 47: 289-92.
7. Munday PE, Johnson AP, Thomas BJ, Taylor-Robinson D. A comparison of the sensitivity of immunofluorescence and Giemsa for staining *Chlamydia trachomatis* inclusions in cycloheximide-treated McCoy cells. *J Clin Pathol* 1980; 33: 177-9.
8. Wang S-P, Kuo C-C, Grayston JT. A simplified method for immunological typing of trachoma-inclusion conjunctivitis-lymphogranuloma venereum organisms. *Infect Immun* 1973; 7: 356-60.
9. Thomas BJ, Evans RT, Hawkins DA, Taylor-Robinson D. Sensitivity of detecting *Chlamydia trachomatis* elementary bodies in smears by use of a fluorescein labelled monoclonal antibody: comparison with conventional chlamydial isolation. *J Clin Pathol* 1984; 37: 812-6.
10. Hawkins DA, Wilson R, Thomas BJ, Evans RT. Rapid, reliable diagnosis of chlamydial ophthalmia using monoclonal antibodies. *Br J Ophthalmol* (in press).